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DISCOVERY OF A NEW LIVING *CERITHIOCLAVA* SPECIES IN THE CARIBBEAN (MOLLUSCA: PROSOBRANCHIA: CERITHIIDAE)

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Abstract.—*Cerithioclava garciai* occurs on the shallow-water banks of the Caribbean off Honduras and is the only living member of the Pliocene Caloosahatchian genus *Cerithioclava* Olsson and Harbison, 1953. The group was previously thought to be extinct and is here accorded full generic status. The species is the largest of all Caribbean cerithiids and closely resembles members of the Indo-Pacific genera *Rhinoclavis* and *Pseudovertagus.*

Specimens of a very large, distinctive cerithiid have recently been collected by fishermen in the western Caribbean on the shallow-water, continental shelf off Honduras. These shells, sent to me for identification by Dr. E. Garcia, proved to represent an undescribed species in the genus *Cerithioclava* Olsson and Harbison, 1953, a taxon previously thought to be extinct and limited to the Tertiary Caloosahatchian Province of Florida. The genus *Cerithioclava* includes two described and one undescribed fossil species.

Although only three specimens of the new species were available for study, the discovery of a living *Cerithioclava* was deemed sufficient justification for immediate description. A description of the new species and a discussion of the genus *Cerithioclava* follows.

Genus *Cerithioclava* Olsson and Harbison, 1953

Type species, by original designation: *Cerithium caloosaensis* Dall, 1892.

Remarks.—This taxon was regarded as a subgenus of *Cerithium* Bruguière by Olsson and Harbison (1953) although they noted a close affinity to *Rhinoclavis* Swainson and indicated that it might be considered a division of that genus rather than of *Cerithium.* In a previous monograph (Houbrick 1978:119), I considered *Cerithioclava* to be a subgenus of *Pseudovertagus* Vignal but pointed out that *Cerithioclava* lacks the distinctive cancellate sculpture of the early whorls so distinctive of *Pseudovertagus* species and, in addition, does not have the central columellar fold characteristic of members of the genus *Rhinoclavis. Cerithioclava* species differ considerably from Caribbean *Cerithium* species by being much larger and in having a long narrow anal canal that is an adpressed extension of the outer lip. In retrospect, I think *Cerithioclava,* comprising four species, differs sufficiently from other cerithiid genera to be given full generic status. It represents an independent cerithiid radiation, having its roots in the Caloosahatchian Province (Petuch 1981) of the northwestern Caribbean and Florida, and has as its sole survivor the new species described herein. There are two described fossil species: *Cerithioclava caloosaensis* (Dall, 1887) and *C. dalli* (Olsson and Petit, 1964). Another fossil species from the Burmont Formation of the Miami area, is undescribed.

Cerithioclava garciai, new species
Fig. 1, Table 1

Description.—Shell large, up to 86.5 mm in length, robust, turreted, comprising 15–

18 slightly convex whorls sculptured with 0–9 axial plications per whorl and with numerous fine spiral and sinuous axial striae. Axial plicae strongly developed on earlier whorls, weaker on last 3. Each whorl having broad subsutural constriction that divides axial plicae into 2 rows, producing an upper subsutural spiral cord with smooth nodular elements, lower remainder of whorl having axial plicae and giving shell an overall wrinkled appearance. Axial plicae absent on body whorl and sometimes very weak on last 3–4 whorls. Fine axial and spiral striae coarser at base of each whorl and on entire body whorl, producing a microscopic beaded texture. Large, prominent varix opposite outer lip of body whorl. Suture impressed, slightly wavy. Aperture (excluding long extension of anal canal) round-ovate, nearly one-fourth shell length. Anterior siphonal canal long, reflected upwards toward the left. Columella concave, smooth, thick and with strong lip. Outer lip smooth, thick, and greatly extended and adpressed to body whorl, where it joins upper columellar lip to form long anal canal, latter almost closed. Tip of anal canal slightly detached from body whorl. Distal end of anal canal lying adjacent to suture of body whorl. Protoconch unknown. Shell color white to light brown, with light tan spiral threads and spiral band of darker brown subsutural nodules. Aperture white. Operculum and radula unknown.

Type locality.—Off Great Corn Island, Nicaragua; 24 meters.

Holotype (Fig. 1, A).—USNM 849023; length 77.4 mm, width 24 mm.

Paratypes (Fig. 1, B–C).—Two specimens, USNM 849024; lengths 84.7 mm and 66 mm.

Etymology.—Named for Dr. Emilio Garcia of Lafayette, Louisiana, who sent the specimens to me.

Remarks.—This large, distinctive species is unlike any other cerithiid in the Caribbean or Florida. At first glance it resembles the large *Rhinoclavis* and *Pseudovertagus* species found in the Indo-Pacific, but although it shares with them a long reflected anterior canal, it is very different in other characters. Aside from size, the chief distinguishing character of *Clavocerithium garciai* is the long extension of the outer lip, adpressed onto the body whorl and forming a long, narrow anal canal. The three specimens upon which this description is based were obviously collected alive as may be seen from shell condition and traces of the animal's mantle, dried in the aperture of the shells. Unfortunately, there were no remains of the radula or operculum. Although only three specimens are available for comparison, the range of sculptural variation is considerable, one specimen lacking or having weaker axial plications on the last four whorls. Shell color is likewise variable, one specimen being highly pigmented, the others being whiter and having only weak color patterns.

Clavocerithium garciai does not resemble either of the two described fossil species from Florida, but an undescribed fossil species from the Miami area, shown to me by Dr. E. Petuch, is undoubtedly closely related, ancestral, or even conspecific. However, *Cerithioclava garciai* does not appear to be a secondarily derived species, sensu Petuch (1981:1125), since it shows only slight divergence from the Florida fossil species.

The Honduran shelf region is poorly known, but recently many unusual species have been collected there by shrimp and lobster boats based at Roatan Island, Honduras. Large carnivorous prosobranchs, such as volutes, miters, and fasciolariids have turned up in this locality and several new species have been described. Petuch (1981: 1110–1111) noted that this region contained many extant elements of the "Neogene Caloosahatchian Molluscan Province," and that a number of relict genera and species complexes have undergone secondary speciation. The discovery of a living *Cerithioclava* species in this locality supports Petuch's (1981:1125, 1982:292) sug-

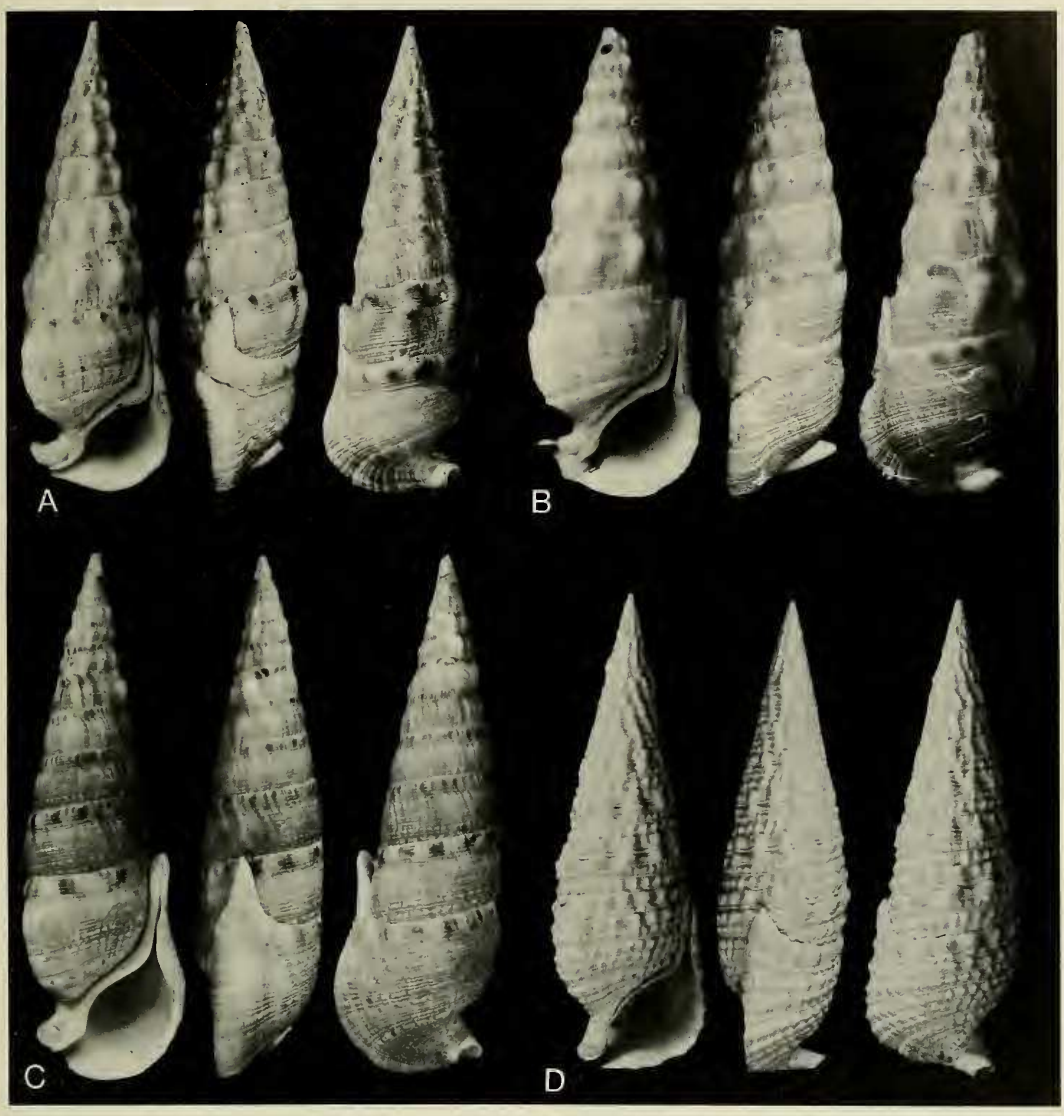

Fig. 1. A–C, *Cerithioclava garciai,* 24 meters off Great Corn Is., Nicaragua: A, Holotype (USNM 849023, length 77.4 mm); B, Large, darkly pigmented specimen with weak axial sculpture, paratype (USNM 849024, length 66 mm); C, Paratype (USNM 849024, length 84.7 mm); D, *Cerithioclava caloosaensis* (Dall, 1887), type species of the genus, from the Caloosahatchee of Florida, Tertiary (USNM 22383, length 60.3 mm).

gestion that the region is a Caloosahatchian relict pocket. A map showing the extent of this relicit pocket region was presented by Petuch (1981:1122, fig. 21).

Due to the limited collecting data, not much may be said about the ecology of this species. Live-collected specimens show calcareous and fine algal growth and other fouling organisms on the entire dorsal surface of the shell while the ventral portion is smooth and clean, indicating that this species is a partial burrower on sandy or rubble bottoms. The long anterior and anal siphons allow the animal to maintain a clear flow of water through the mantle while the shell is partially buried. Breakage scars and the bro-

Table 1.—Shell measurements of *Cerithioclava garciai*. (Total length and number of whorls estimated in shells with damaged tips. All measurements in mm.)

Statistic (n = 3)	$\bar{x}$	SD	Var.	Range
Length	79.33	7.01	32.7	72.5–86.5
Width	24.33	1.53	1.56	23–26
Length body whorl	31.93	2.18	3.18	30–34.3
Aperture length	20.30	2.87	5.49	18.4–23.6
Aperture width	13.70	1.30	1.13	12.9–15.2
No. axial plicae	6.33	4.62	14.22	0–9
No. whorls	16.33	1.53	1.55	15–18

ken shell tips show previous unsuccessful crab attacks on all three specimens.

It is remarkable that a species as large and distinctive as *Cerithioclava garciai* has remained unknown for so long in the Caribbean. One would expect that a large cerithiid, in a family characterized by herbivorous species that usually occur in abundance, would be common in its habitat and taken more frequently than the rarer carnivorous volutes. I suspect that this species is common, but as cerithiids are not regarded as collector's items they are probably thrown back by fishermen. This may explain why only a few specimens exist, to date. It is possible that other Caloosahatchian cerithiid taxa, such as *Ochetoclava* Woodring, previously regarded as extinct in the Western Atlantic (Houbrick 1978:89), may be found here, as well as other unusual molluscan elements that are of little interest to shell collectors. The region needs a thorough scientific survey.

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